Chapter 10

Wastewater Planning Policies

To protect public health and water quality, it is essential to plan wastewater facilities before they are needed. The RWSP wastewater planning policies are intended to guide King County in its long-term comprehensive planning to meet the regional wastewater needs of the county's service area. The policies direct the county to make a long-term assessment of wastewater needs when planning for future wastewater systems and to take into account full build-out when considering the sizing of facilities. They also call for the county to coordinate with other local jurisdictions and look for opportunities to save costs. In addition, the policies call for review of RWSP implementation and the assumptions that guide the RWSP.

This chapter provides an overview on implementation of the wastewater planning policies and summary information on amendments to the policies adopted by the King County Council in 2004 through 2006. The complete text of all the wastewater planning policies, including information on policy amendments and a brief summary of how each policy was implemented in 2004–2006, is provided in Appendix I.

10.1 Implementation of Wastewater Planning Policies from 2004 through 2006

10.1.1 Reviewing Planning Assumptions

The RWSP reporting policies and wastewater planning policies call for the RWSP comprehensive review reports to review assumptions on the rate and location of growth, on the rate of septic conversions, and on water conservation efforts. This document provides a comprehensive review of RWSP implementation in 2004–2006. As reported in the conveyance policies chapter (Chapter 3), WTD projects future wastewater flows by first using population and employment forecasts provided by the Puget Sound Regional Council (PSRC).[1] PSRC data are provided in two levels of detail—the more geographically broad forecast analysis zones (FAZ) and the more detailed traffic analysis zones (TAZ). To forecast wastewater flows, WTD uses the TAZ information and allocates the population estimated by TAZ to each of the county's wastewater hydraulic model basins according to the number of developed parcels in each TAZ and model basin.

PSRC provided updated TAZ information in 2003, based on the 2000 census. This information was used to update the 1998 RWSP population and employment growth and flow projections as

[1] The Puget Sound Regional Council was created in 1991 as an association of governments working together on planning issues of regional significance.

documented in the *2004 RWSP Update*.[2] There have been no updates made to the data that was presented in the 2004 update because no new PSRC TAZ data are available. Projections reported in the 2004 update confirmed the need for the major treatment and conveyance improvements that are under way and planned through 2030. The process to update the conveyance system improvement (CSI) yielded information from the component agencies that prompted changes in some of the estimated dates that 20-year peak flow volumes will exceed the capacity of regional conveyance facilities (see Chapter 3). However, the overall projections for the 20-year peak flow in 2050 did not change.

The key planning assumptions used to determine flow projections and facility sizing remain as follows:

- **Extent of Eventual Service Area.** The assumed extent of the planning area is the sewerable areas within Urban Growth Areas of King, Snohomish, and Pierce counties where King County WTD has sewage disposal contracts.
- **Future Population.** PSRC 2003 TAZ data, which is forecasted out to 2030, is allocated to sewer basins to determine future flow projections. The maximum wastewater system service area population is a straight line extrapolation of the growth rate between 2020 and 2030 out to 2050.
- **Water Conservation.** WTD continues to assume a 10 percent reduction in per day water consumption between 2000 and 2010, with no additional reduction after 2010.
- **Septic Conversion.** The current planning assumption is that 90 percent of the unsewered area (in year 2000) with potential for sewers will be sewered by 2030 and that 100 percent of this area will be sewered by 2050.
- **Infiltration/Inflow (I/I) Degradation.** WTD assumes that I/I degradation starting in 2000 would be 7 percent per decade, with a limit of 28 percent over a 40-year period; for new construction, the degradation assumption of 7 percent per decade will start after the decade of construction, to a maximum of 28 percent. Future monitoring and modeling may provide refinements to this estimate.
- **Design Standard.** In accordance with RWSP Conveyance Policy (CP)-1, the 20-year peak flow storm in 2050 is used as the design standard for the separated regional conveyance system.
- **Planning Horizon.** The year 2050 is used to represent the projected date that the regional wastewater service area will be fully built out and all sewerable portions of the service area will be connected into the wastewater system. WTD extrapolates the PSRC population forecasts linearly from 2030 to 2050 for each of the wastewater basins. RWSP WWPP-4 calls for facility sizing to take into account the need to accommodate build-out population.

WTD will continue to review and analyze future information that could affect RWSP planning assumptions and make adjustments, if needed, to flow projections and facility needs and sizing. For example, in spring 2007, the City of Seattle revised its water conservation assumptions and

[2] The *2004 RWSP Update* provides a comprehensive review of RWSP implementation from 1999 through 2003, and is available at http://dnr.metrokc.gov/wtd/rwsp/library.htm#ProgressReports

is now projecting greater conservation through 2010 and additional conservation between 2010 and 2020. WTD is in the process of analyzing Seattle's revised water conservation assumptions to determine the effect, if any, on future flow projections and facility needs.

Other factors are also important and therefore considered in planning for wastewater facilities. These include flow monitoring data, results of inspections of existing facilities, information provided in component agency comprehensive plans, potential for new regulations, new technologies, and potential effects of climate change. These factors, along with changes or updates to planning assumptions, may affect the need, timing, phasing, or sizing of future RWSP planned projects.

10.1.2 Coordinating with Local Jurisdictions in Planning Wastewater Facilities

The RWSP wastewater planning policies recognize the importance of coordinating with other jurisdictions to minimize construction-related disruption to neighborhoods. In addition, the policies acknowledge that collaboration with local jurisdictions can lead to cost saving opportunities.

WTD regularly works with local jurisdictions and affected neighbors during the planning, design, and construction of projects to minimize construction-related disruptions. Agreements related to hours of construction, parking for construction workers, noise control, and traffic control result from these efforts. More information on how the county mitigates construction related impacts is provided in the Environmental Mitigation Policies chapter (Chapter 11). The Public Involvement Policies chapter (Chapter 12) includes information on how King County involves local jurisdictions and affected neighbors in the planning, design and construction of the county's regional wastewater facilities.

Examples of activities in 2004–2006 that could lead to potential cost-savings are as follows:

- **Executive's Recommended I/I Program**. The recommendations in this King County Council approved program represent the consensus reached by the county and component agencies throughout the six-year program development process. Implementation of this program is under way and will help determine if enough I/I can be cost-effectively removed from the collection system to delay, reduce, or eliminate some otherwise needed conveyance improvement project.
- **Partnership with Ducks Unlimited.** King County is partnering with Ducks Unlimited, a nonprofit organization dedicated to wetland conservation, to design the Carnation Treatment Plant wetland discharge project. This partnership will help reduce costs and expedite implementation of the project.
- **Brightwater Backbone.** Building the reclaimed water pipes during construction of the Brightwater conveyance tunnels and providing reclaimed water to the Sammamish Valley from the backbone are more cost-effective than building and operating a stand-alone satellite facility in the Sammamish Valley. Building the backbone now is less expensive and less disruptive to the local jurisdictions than building it in the future.

- **Conveyance System Improvement (CSI) Program Update.** During the process to update the CSI program, King County and the Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) worked collaboratively to identify and analyze alternative cost containment strategies, such as delaying or phasing project construction. To assist in identifying the most pressing conveyance system needs, prioritization criteria were jointly developed and applied to planned conveyance projects.
- **Ballard Siphon Replacement Project.** Coordination within WTD also provides opportunities for cost-savings. The Ballard Siphon Replacement Project—initiated in 2006 and scheduled for completion in 2010—will protect water quality in the Lake Washington Ship Canal by replacing the 70-year-old wooden sewer pipe that extends across the floor of Salmon Bay near the Hiram M. Chittenden Locks. In addition, the project is being designed to bring the CSO at the Ballard Regulator Station under control and, thus, eliminate the need for the CSO storage project at this location scheduled in the RWSP for completion in 2029. The project also holds the potential to reduce CSOs at the 11th Avenue Regulator Station and thus reduce the size of the CSO storage project planned for completion at this location in 2030.

10.1.3 Monitoring RWSP Implementation

The wastewater planning policies call for the county to monitor the implementation of the RWSP and conduct reviews of the RWSP in accordance with the RWSP reporting policies.

Implementation of the RWSP is monitored in a number of ways. WTD works with and seeks advice from with MWPAAC on major program efforts, as exemplified by the six-year I/I study and the CSI Program Update. The Regional Water Quality Committee (RWQC) reviews RWSP projects and programs and recommends policy amendments as needed. In addition, the King County Council reviews RWSP capital projects during the council's budget process.

The King County Council and RWQC also review RWSP comprehensive reviews and annual reports. The RWSP reporting policies require the King County Executive to document each year's progress on RWSP implementation in an annual report until the facilities identified in the RWSP are operational. RWSP annual reports have been provided to the King County Council and RWQC for their review each year since 2000.The policies also call for a comprehensive review report to be prepared every three to five years to review the effectiveness of RWSP policy implementation and RWSP planning assumptions. Comprehensive reviews are to include all elements of the RWSP annual report, replacing it for that year.

This *RWSP 2006 Comprehensive Review and Annual Report* is intended to meet the comprehensive review report requirements for 2004–2006. The *2004 RWSP Update* provided a comprehensive review of RWSP implementation from 1999 through 2003.

RWSP annual reports and comprehensive review reports are available on the RWSP Web site at http://dnr.metrokc.gov/wtd/rwsp/library.htm

10.2 Amendments to Wastewater Planning Policies

The King County Council approved amendments to wastewater planning policy (WWPP)-5 relating to the RWSP review reports via adoption of Ordinance 15384 in March 2006. The amendments consolidated all RWSP review and reporting requirements into a new reporting policies section of King County Code Chapter 28.86. The policy amendments in Ordinance 15384 eliminated redundancies in the reporting requirements, adjusted the due dates to reflect the availability of information, and consolidated the reporting requirements into fewer but more comprehensive reports. In addition, consolidating RWSP reporting requirements in one section of the King County Code (28.86.165) facilitates future changes or additions to these requirements.